

15. An optical disc according to claim 14 in which said disc includes a biological, chemical or biochemical material attached to said sample support surface.

16. An optical disc according to claim 15 in which said material attached to said sample support is coloured, reflective or fluorescent.

17. An optical disc according to claim 14 which comprises a gel and electrodes for applying a potential across said gel.

18. A system for conducting optical inspection of a biological, chemical or biochemical sample comprising:

a disc according to claim 14; and

an optical disc inspection assembly including:

a radiation source for providing at least one beam of electromagnetic radiation;

a detection system comprising one or more detectors for detecting radiation reflected from and transmitted through said semi-reflective layer.

19. A system according to claim 18 in which said radiation source is located relative to said disc so that said sample support surface is located between said radiation source and said semi-reflective layer.

20. A system according to claim 18 in which said radiation source is located relative to said disc so that said semi-reflective surface is located between said radiation source and said sample support surface.

21. A system according to claim 20 in which said detection system comprises two detectors wherein one of said two detectors is located on the same side of said disc as said

radiation source and the other of said two detectors is located on the side of said disc opposite said radiation source.

22. A system according to claim 21 in which said detection system further comprises a third detector located on the side of said disc opposite said radiation source.

23. A system according to claim 18 in which said detection system comprises a video monitor for viewing the results of said optical inspection.

24. A system according to claim 18 in which said disc comprises a gel and electrodes for applying a potential across said gel.

25. A method of conducting an optical inspection of a biological, chemical or biochemical sample employing a disc adapted to be read by an optical reader, comprising the steps of:

providing such a sample associated with a disc according to claim 14;
conducting an optical inspection of said sample using an optical reader; and
reading said encoded information with said reader.

26. The method of claim 25 in which said steps of conducting an optical inspection includes the substep of using quarter wave light reflected from said disc as part of said conducting and reading steps.

27. A method according to claim 25 in which said conducting includes providing an optical image of said material.

28. A method according to claim 25 in which said optical inspection includes directing a beam of radiation onto said sample to produce detectable radiation which is reflected from and/or transmitted through said sample.

29. A method according to claim 28 in which only detectable radiation which is reflected from said disc is measured.

30. A method according to claim 28 in which detectable radiation which is both reflected from and transmitted through said disc is measured.

31. A method according to claim 29 in which said sample support surface is internal to said disc.

32. An optical disc for use in conducting an optical inspection of a biological, chemical or biochemical sample in association with an optical reader capable of scanning and reading optical discs with a beam of light, said disc comprising:

an optically transparent substrate having semi-reflective means for reflecting a portion of said beam of light to form a reflected beam and transmitting a portion of said beam of light to form a transmitted beam; and

sample support means positioned to be scanned by said reader for receiving said biological, chemical or biochemical sample thereon, the presence of a sample on said support means providing modulation of said reflective beam and said transmitted beam.

33. An optical disc according to claim 32 in which said semi-reflective layer includes optically readable encoded information to be read by said reader for controlling the scanning of said reader relative to said disc,

34. An optical disc according to claim 33 in which said encoded information and said sample on said support means are in optical alignment with respect to said beam of light.

35. A disc according to claim 33 in which said optically readable encoded information is in the form of a circular track or a spiral track.

36. An optical disc according to any one of the preceding claims 33 through 35 in which said encoded information is located in at least an intermediate region of said disc.

37. An optical disc according to any one of the preceding claims 32 through 35 in which said disc includes biological, chemical or biochemical material attached to said sample support means.

38. An optical disc according to claim 37 in which said material attached to said sample support is coloured, reflective or fluorescent.

39. An optical disc according to claim 32 which comprises a gel and electrodes for applying a potential across said gel.

40. A system for conducting optical inspection of a biological, chemical or biochemical sample comprising:

a disc according to claim 32; and an optical disc inspection assembly including:

a radiation source for providing at least one beam of electromagnetic radiation;

and

a detection system comprising one or more detectors for detecting radiation reflected from and transmitted through said semi-reflective means.

41. A system according to claim 40 in which said radiation source is located relative to said disc so that said sample support surface is located between said radiation source and said semi-reflective layer.

42. A system according to claim 41 in which said radiation source is located relative to said disc so that said semi-reflective means is located between said radiation source and said sample support means.

43. A system according to claim 42 in which said detection system comprises two detectors wherein one of said two detectors is located on the same side of said disc as said radiation source and the other of said two detectors is located on the side of said disc opposite said radiation source.

44. A system according to claim 43 in which said detection system further comprises a third detector located on the side of said disc opposite said radiation source.

45. A system according to claim 40 in which said detection system comprises a video monitor for viewing the results of said optical inspection.

46. A system according to claim 40 in which said disc comprises a gel and electrodes for applying a potential across said gel.

47. A method of conducting an optical inspection of a biological, chemical or biochemical sample employing a disc adapted to be read by an optical reader, comprising the steps of:

providing such a sample associated with a disc according to claim 32;
conducting an optical inspection of said sample using an optical reader; and
reading said encoded information with said reader.

48. The method of claim 47 in which said step of conducting an optical inspection includes the substep of using quarter wave light reflected from said disc.

49. A method according to claim 47 in which said conducting includes providing an optical image of said material.